Education & Workforce: Capacity Building
Preparing for a New Workforce

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A More Dependent Population

By 2030, for every 52 dependent people in the United States there will be just 48 working-age adults to provide for them.

<table>
<thead>
<tr>
<th>Year</th>
<th>Under 25</th>
<th>25-64</th>
<th>65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>32.0</td>
<td>52.4</td>
<td>15.6</td>
</tr>
<tr>
<td>2020</td>
<td>32.6</td>
<td>51.1</td>
<td>16.3</td>
</tr>
<tr>
<td>2030</td>
<td>32.5</td>
<td>47.8</td>
<td>19.7</td>
</tr>
</tbody>
</table>
Employment Losses and Gains by Education Level

Recession (Dec 2007-Jan 2010)
- 5.6 million people lost jobs
- 187,000 people gained jobs
- 1.8 million people lost jobs

Recovery (Jan 2010-April 2016)
- 8.6 million people gained jobs
- 3.1 million people gained jobs
- 80,000 people gained jobs

Net Gain 8.6 million
Net Gain 3.1 million
Net Loss 5.6 million

Source: Carnevale, Jayasundera, Gulish, 2016
Unprepared and Unaware

Upskilling the Workforce for a Decade of Uncertainty

February 2019

Southern Regional Education Board
SREB.org

The SREB Region’s Economic Outlook

The Potential Impact of Automation and AI

Many American workers find themselves in a continuous struggle to keep up
with advances in automation and artificial intelligence that could potentially
displace them from a growing list of occupations. Nearly every day, articles
and online videos highlight new technologies. We hear about machines being
tested to deliver packages to humans autonomously. A robotic interviewer in
Sweden now questions job applicants in an attempt to eliminate human bias
from the hiring process. And researchers are working on an ear canal implant for
humans to record everything their eyes see during the day.

As companies continue to incorporate new technologies, making machine
learning and robotics common in almost all workplaces, more and more
working adults need to adapt to computerized work activities. Many need
to move into new jobs raising their skill levels, or they will be out of a job
altogether. According to SREB’s Unprepared and Unaware: Upskilling the
Workforce for a Decade of Uncertainty, adults with the lowest levels of skills
— typically those with a high school credential or less — are most vulnerable
to these changes.

If states and industry leaders do not act quickly
to prepare employees for these workplace
transformations, 18 million or more adults
will find themselves in low-paying positions
or out of a job and increasingly reliant on
public services. Businesses will struggle
to fill middle- and high-skilled positions.

Children — future workers — will face
similar struggles and likely be unprepared
for future positions, worsening these problems
for states and businesses.

This brief was prepared by Morgan Brown, policy analyst, under the leadership of Jeff Gingué, director of
policy analysis; and Jeanne Earl, vice president of education data, policy research and programs.
4th Industrial Revolution

**FIRST**
Mechanical Production
steam, water

1784: First power loom

**SECOND**
Mass Production
electricity

1870: First assembly, line

**THIRD**
Digital
IT, Electronics

1969: First programmable logic controller

**FOURTH**
Cyber physical systems
physical, digital, biological

Today: Robots learning from humans
Most Fields Rely (or Will Rely) on STEM

Health Care
- Doctors
- Nurses
- Lab Techs
- Med Assts

Skilled Trades
- Plumbers
- Electricians
- Carpenters
- Mechanics

White Collar Professionals
- Scientists
- Architects
- Engineers
- Psychologists
Educational Attainment
Adults 25-64 in Georgia

<table>
<thead>
<tr>
<th>Year</th>
<th>Less than high school</th>
<th>High school or equivalency</th>
<th>Some college or associate degree</th>
<th>Bachelor's degree or higher</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>12%</td>
<td>27%</td>
<td>29%</td>
<td>31%</td>
</tr>
<tr>
<td>2007</td>
<td>15%</td>
<td>30%</td>
<td>27%</td>
<td>28%</td>
</tr>
</tbody>
</table>

Note: Percentages may not add to 100% due to rounding.

Source: U.S. Census Bureau
Most of the 50 million workers in the region will be affected by automation in the coming decades.

If state and business leaders do not act, 18 million workers and their children could be unemployable or stuck in low-wage jobs: an endless cycle of poverty.

This multigenerational cycle, combined with rising workforce skill demands, means more workers of all educational attainment levels will be:

- Unemployed or underemployed
- Earning incomes below the poverty level
- Reliant on state services

Just 5% of jobs are completely automatable, but 44% of all work activities have automation potential. In the top 5 industries, the potential is often greater:

- 86% Production
- 63% Transportation
- 42% Sales
- 66% Food Preparation & Serving
- 84% Office & Administrative

Note: The top five industries employ the most people.

37% workers highly vulnerable to rising workforce skill demands
59% vulnerable workers employed in the top 5 industries in 2016

Business & industry will need increasing numbers of workers with middle & high skills.

Are students prepared?

Parents today: 25 to 44 year-olds
37% had a high school credential or less in 2017
Of 8th graders whose parents had no education after high school
36% were below Basic on NAEP reading and
48% were below Basic on NAEP math

These percentages were just
22% for students whose parents had some education beyond high school
Pre-Pandemic Total Automation Potential
Work activities in the Top 5 Employing Industries (2014-2030)

In the industries that employ the most people, automation potential is often greater:

- Food Preparation and Serving: 46%
- Sales and Related: 28%
- Production Occupations: 58%
- Office and Administrative: 43%
- Transportation and Material Moving: 42%
The pandemic advanced “consumer and business digital adoption” by an estimated five years in just eight weeks.
By 2025 – no longer 2030 – accelerated digital adoption due to the pandemic could eliminate the full-time equivalence of

• *389,000 positions* at the most conservative rate,

• *1,295,000 positions* at a midpoint rate, or

• *2,590,000 positions* at the fastest estimated rate.

Education & Workforce/Pruitt
Percentage of the Workers that are Vulnerable During the Pandemic in Each Top 5 Industry

The percentage of vulnerable workers varies by industry:

- 100% Food Preparation and Serving
- 73% Sales and Related
- 90% Production Occupations
- 99% Installation and Maintenance
- 52% Transportation and Material Moving

...together, they make up almost one-third of the total workforce in the SREB region.
Working Toward a Unified Vision
Setting Workforce “North Star”

Preparing and educated and skilled workforce

Other goals aligned to the vision

Meeting the skilled workforce needs of employers

English and math, high school graduation rate and English proficiency

States can add other goals under all three statutes

Required by Perkins V and WIOA

Required by ESSA

Education & Workforce/Pruitt
Ensure that your programs help everyone take part in achieving the vision

**Career pathways**
- Share labor market data
- Target the same set of in-demand industries
- Use a shared set of criteria and processes to develop high-quality pathways
- Get K-12 students involved earlier

**Work-based learning**
- Focus funds on WBL in the most in-demand fields
- Articulate what high-quality work-based learning looks like

**Equity**
- Collaborate on professional learning, plan together, share resources
- Coordinate support services
- Engage shareholders together
Some Final Thoughts

• Address Teacher Shortages
• Reconsider Assessment and Accountability
• Quality Pathways from K-12 through career
• Set robust goals and align programs to meet those goals
• Aligned data system from kindergarten through workforce
• Education is a marathon
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